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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/675,902	09/28/2000	Barrie Gilbert	1482-129	8966

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EXAMINER

NGUYEN, TUNG X

ART UNIT PAPER NUMBER

2829

DATE MAILED: 03/05/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/675,902

Applicant(s)

GILBERT, BARRIE

Examiner

Tung X Nguyen

Art Unit

2829

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 09/28/00.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-27 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-27 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 28 September 2000 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

## DETAILED ACTION

### *Drawings*

1. Figures 2 and 3 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

### *Specification*

2. The disclosure is objected to because of the following informalities: On page 3, line 5, line 9, "VB", "V<sub>OUT\_A</sub>", should be --V<sub>B</sub> --, and --V<sub>OUT\_A</sub>--, respectively. Furthermore, "Summary of the invention" is missing.

Appropriate correction is required.

***Claim Rejections - 35 USC § 102***

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1-5, 10, 13, 19, and 22-27 are rejected under 35 U.S.C. 102(b) as being anticipated by Underwood (U.S.P 4,131,254).

Regarding claim 1, Underwood discloses in Fig. 1, a system comprising a first log amp (30); and a second log amp (32);

Regarding claims 2-3, Underwood discloses in Fig. 1, a system having a differencing circuit (40) coupled to the first and second log amps.

Regarding claim 4, Underwood discloses in Fig. 1, a system having the differencing circuit comprises a summing node. It appears that the differencing circuit inherently has a summing node.

Regarding claim 5, Underwood discloses in Fig. 1, a system having an output interface (42) circuit coupled to the differencing circuit.

Regarding claim 10, Underwood discloses a system having the first and second log amps are co-integrated on a substrate (Col 3, lines 48-54).

Regarding claim 13, Underwood discloses in Fig. 1, a system having a first parasitic network (26) coupled to the first log amp; and a second parasitic network (28) coupled to the second log amp; wherein the first and second parasitic networks have similar frequency responses. It appears that the first and second parasitic networks inherently have similar frequency responses.

Regarding claim 19, Underwood discloses an integrated circuit comprising two or more log amps (Col. 3, lines 48-54).

Regarding claim 22, Underwood discloses in Fig. 1, a step of system, comprising: logarithmically amplifying a first input signal, thereby generating a first output signal via log amp (30); logarithmically amplifying a second input signal, thereby generating a second output signal via log amp (32); and differentially processing the first and second output signals via Diff. Amp. (40).

Regarding claims 23-24, Underwood discloses in Fig. 1, a step of system, wherein the first and second output signals are logarithmic output signals (30, 32); and differentially processing via diff amp (40) the first and second output signals comprises differencing/multiplying the first and second output signals.

Regarding claim 25-27, Underwood discloses in Fig. 1, log amps (30, 32) having first and second input signals, respectively as claimed.

***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 6-7, 9, 16, 18 are rejected under 35 U.S.C. 103(a) over Underwood (U.S.P 4,131,254) in view of Fujii et al (U.S.P 5,731,698)

Claim 6 adds the limitation of a phase detector core coupled to the first and second log amps. Fujii et al. disclose a phase detector couple to two signals for measuring the relative phase of two signals that are applied to the log amps. It would have been obvious to a person having ordinary skill in the art at the time the invention was made to modify the system taught by Underwood and add a phase detector core as taught by Fujii et al. for the purpose of detecting the phase of a signal instantaneously due to the use of the first and second log amps.

Claim 7 adds the limitation of the first log amp has a first limiting output to a first input of the phase detector core; and the second log amp has a second limiting output coupled to a second input of the phase detector core. It is inherently limiting output to a first and second log amps by applied voltage source on log amps.

Regarding claim 9, Fujii discloses a system having an output interface circuit (Fig. 18, element 102) coupled to the phase detector core.

Regarding claim 16, Underwood in Fig. 1 disclose a system comprising a first log amp having a first limiting output; a second log amp having a second limiting output. Underwood does not disclose a phase detector core coupled to the first and second log amps. However, Fujii et al. disclose in Fig. 20, element 101, a phase detector couple to signals for measuring the relative phase of two signals that are applied to the log amps. It would have been obvious to a person having ordinary skill in the art at the time the invention was made to modify the system taught by Underwood and add a phase detector core as taught by Fujii et al. for the purpose of detecting the phase of a signal instantaneously due to the use of the first and second log amps.

Regarding claim 18, Underwood discloses a system having first and second log amps are co-integrated on a substrate (Col 3, lines 48-54).

7. Claims 8, 17 are rejected under 35 U.S.C 35(a) over Underwood in view of Fujii and further in view of Lopez et al (U.S.P 5,530,349).

Claims 8, 17 add the limitation wherein the detector core comprising a multiplier. Lopez et al disclose a system wherein detector core comprises a multiplier (Col. 4, line 20). It would have been obvious to a person having ordinary skill in the art at the time the invention was made to modify the system taught by Underwood in view of Fujii et al. and add a multiplier as taught by Lopez et al. for the purpose of reducing power dissipation.

8. Claim 11 is rejected under 35 U.S.C 103(a) over Underwood in view of Ausschnitt (U.S.P 4,538,105).

Claim 11 adds the limitation of the first and second log amps are arranged symmetrically about a center line. Ausschnitt discloses the first and second log amps arranged symmetrically about a center line (Col. 4, lines 31-35). It would have been obvious to a person having ordinary skill in the art at the time the invention was made to modify the system taught by Underwood and add the first and second log amps are arranged symmetrically about a center line as taught by Ausschnitt for the purpose of improving the test wafer or integrated circuit.

9. Claim 12 is rejected under 35 U.S.C 103(a) over Underwood in view of Iwasaki (U.S.P 5,865,632).

Claim 12 adds the limitation of the substrate is mounted in a package. Iwasaki discloses the substrate is mounted in a package (Col. 5, lines 57-62). It would have been obvious to a person having ordinary skill in the art at the time the invention was made to modify the system taught by Underwood, and add the substrate is mounted in a package as taught by Iwasaki for the purpose of protecting the integrated circuit, and reducing power dissipation.

10. Claim 14, 15, and 20 is rejected under 35 U.S.C 103(a) over Underwood in view of Bradbury et al. (U.S.P 5,534,854)

Claims 14, 15, and 20 add the limitation of a differencing circuit coupled to the two or more log amps in an integrated circuit. Underwood discloses the two or more log amps in an integrated circuit. Underwood does not disclose a differencing circuit coupled to the two or more log amps in an integrated circuit. However, Bradbury et al. disclose the differencing circuit in an integrated circuit (Col. 3, lines 22-26). It would



have been obvious to a person having ordinary skill in the art at the time the invention was made to modify the system taught by Underwood, and add the differencing circuit coupled to the two or more log amps in an integrated circuit for the purpose of reducing power dissipation.

11. Claim 21 is rejected under 35 U.S.C 103(a) over Underwood in view of Feeney et al. (U.S.P 5,508,610).

Claim 21 adds the limitation of a phase detector coupled to the two or more log amps in an integrated circuit. Underwood discloses the two or more log amps in an integrated circuit. Underwood does not disclose a phase detector coupled to the two or more log amps in an integrated circuit. However, Feeney et al. disclose the phase detector in an integrated circuit (Col. 7, lines 48-53). It would have been obvious to a person having ordinary skill in the art at the time the invention was made to modify the system taught by Underwood, and add the phase detector coupled to the two or more log amps in an integrated circuit for the same purpose above.

### ***Conclusion***

12. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Smith et al. 5,767,780     Detector for flow abnormalities in gaseous diffusion  
Plant compressors.

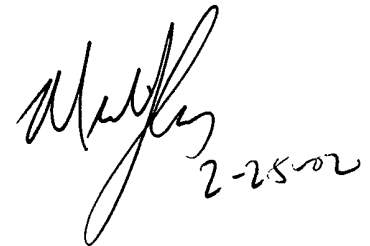
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13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tung X Nguyen whose telephone number is (703) 305-3337. The examiner can normally be reached on 8:30am-5:00pm M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Sherry can be reached on (703) 308-1680. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 308-5841 for regular communications and (703) 308-5841 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

TN  
February 22, 2002



MICHAEL J. SHERRY  
PRIMARY EXAMINER